

Applicants wish to thank the Examiner for the courtesy of the personal interview extended to the undersigned and applicant's German and European patent attorney, Dr. Helga Kutzenberger, at the U.S. Patent Office on December 6, 2002 and for the follow-up telephone interview of December 11, 2002. At the personal interview, applicants representatives discussed with the Examiner proposed additional tests and data which could be carried out and submitted in order to supplement the prior Rule 132 Declaration of Walter Bernig and overcome the Examiner's objection thereto, and to overcome the Examiner's alleged *prima facie* case of obviousness. In the telephone interview, the Examiner conveyed some possible concerns with the prior test data. The substance of the interviews is summarized and supplemented in the following remarks in connection with the specific rejections of the Examiner and submissions of applicants.

The Examiner has rejected claims 1-17 under 35 U.S.C. § 112, second paragraph, as being indefinite on the ground that the term "texture and appearance of paper" in the first line of claim 1 is relative, has no art accepted meaning and is unclear how the laminate is like paper. Applicants strenuously disagree that the term "texture and appearance of paper" is indefinite, especially in view of the prior submissions of applicants, including the Declaration under 37 C.F.R. § 1.132 of Dr. Ulrich Reiners, dated July 2, 1999, in which samples from Examples 1 and 2 of the present application were submitted. Further, the enclosed Second Declaration of Walter Bernig under 37 C.F.R. § 1.132 ("Second Bernig Declaration"), which will be discussed more fully below, points out the important distinctions between a paper-like film and a plastic appearing film (see Table 2 and discussion of results in paragraph 5.2 of the Second Bernig Declaration).

However, during the interview with the Examiner, it was agreed that the term "with an appearance and texture of paper" was unnecessary to the claims, because it is a statement of the properties or advantages of the film having the claimed structure. While applicants still believe that the term is non-objectionable, particularly as it appears in the preamble of the claim, the term has been deleted by the above amendment. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112 are respectfully requested.

In paragraphs 2-8 of the Office Action, the Examiner has repeated the several prior art rejections of all of the claims under 35 U.S.C. § 103(a) as being unpatentable over one

or more combinations of prior art references for the reasons of record, particularly in the previous Office Action. All of these rejections include U.S. Patent No. 4,567,089 of Hattori, et al., as either a primary or secondary reference, and this reference, in particular, was discussed at the interview. All of the rejections and references have been previously discussed and addressed by applicants, particularly in response to the previous Office Action, and these discussions are incorporated herein by reference. All of the prior art rejections are again respectfully but strenuously traversed for the reasons previously of record, as well as the additional reasons and submissions set forth below.

Submitted herewith is the Second Declaration of Walter Bernig under 37 C.F.R. § 1.132, signed and dated on March 10, 2003. A facsimile signature page of Mr. Bernig is being provided with a clean copy of the unsigned Declaration in view of the filing deadline for this response. However, a fully signed original will be provided upon request after it is received by mail.

The Second Bernig Declaration is being provided (1) to overcome the *prima facie* case of obviousness which the Examiner has alleged in the Office Actions to date and (2) to obviate the Examiner's objections to the First Bernig Declaration dated January 7, 2002, which objections are set forth, for example, at the top of page 7 of the Office Action and in the Examiner's Interview Summary of the telephone interview dated December 11, 2002 between the Examiner and the undersigned. It is submitted that the Second Bernig Declaration, together with prior test data in the first Bernig Declaration and at pages 8-10 of the present specification, establishes the criticality of the claimed thickness ratio of the unfilled layers to the filled layer and also establishes unexpected results, either or both of which overcome any *prima facie* case of obviousness which may be established by the Examiner. It is believed that the Second Bernig Declaration is self-explanatory, and therefore the substance of the Declaration will not be repeated herein. However, the Examiner's attention is particularly directed to the Discussion of Results in paragraphs 5.1-5.3 at pages 5-7 of the Second Bernig Declaration.

At paragraph 5.3 of the Declaration Mr. Bernig specifically addresses the Examiner's concerns relating to the data presented in the First Declaration. Thus, the data in the Second Bernig Declaration (1) reduce the number of variables being changed in the tests, so that it can be more clearly seen how the thickness ratio of the layers affects the properties of the film;

(2) provide a number of additional data points both inside and outside of the claimed range (although not mentioned by Mr. Bernig, it is noted that Examples 1 and 2 and Comparative Examples 1 and 2 at pages 8-10 of the present specification provide four (4) additional data points – two within and two outside the claimed range); and (3) eliminate the possible effect of the three adhesive layers (layers A', B and D) in the test films of the First Declaration (in response to the Examiner's question at page 7 of the Office Action, it was pointed out at the interview that layer A' in the tests of the First Bernig Declaration also functioned as an adhesive layer), or the two adhesive layers (layers B and D) in the examples at pages 8-10 of the specification.

As discussed in paragraphs 5.1 and 5.2 of the Second Bernig Declaration, the test films having unfilled/filled layer thickness ratios within the claimed range exhibited a combination of advantageous properties of the claimed film for use as a packaging material, especially the paper-like appearance and texture and the very good thermoforming properties (as demonstrated by the wide temperature range for thermoformability). In contrast, the comparative films with ratios just above or below the claimed range possessed only one, but not both, of these properties. As pointed out in paragraph 5.2 of the Discussion, the paper-like appearance and texture of the films provides better printing properties, as well as higher surface roughness depth and slip resistance, which allow better stacking of packages, for example during storage or resting on a shelf.

Further, as pointed out at the interview, the results obtained by Hattori, et al. are not comparable to the results of the presently claimed invention, but in fact are largely just the opposite. First, the intent of Hattori, et al. is to produce a laminated sheet having a surface layer with excellent gloss (*i.e.*, plastic appearance) instead of a paper-like appearance according to the present invention. Second, the effect of the change in ratio of layer A (essentially unfilled layer) to layer B (essentially filled layer) of Hattori, et al. is the opposite of the change in ratio of the unfilled to filled layers of the films of the present invention.

The effect of the layer ratio of Hattori, et al. is discussed particularly at column 5, lines 31-46. As the thickness of layer A (unfilled layer) decreases, the gloss (plastic appearance) remarkably drops, while when the thickness of layer A increases, the deep drawing performance deteriorates. In contrast, as seen from the comparison film tests in Table 1 at the bottom of page

4 of the Second Bernig Declaration, as the thickness of the unfilled layer (relative to the filled layer) increases the appearance of the film becomes more plastic and the range of thermoforming temperature actually improves. Similarly, when the thickness of layer B (filled layer) of Hattori, et al. decreases below the lower limit of 55%, the deep drawing performance deteriorates, and as the thickness increases, a sufficient gloss layer cannot be obtained. Again, Table 1 at the bottom of page 4 of the Second Bernig Declaration shows that a thinner filled layer (relative to the unfilled layer) results in a much greater range of thermoforming temperature, *i.e.*, an improvement, not a deterioration.

These results can be seen more graphically from Table 2 at columns 11 and 12 of Hattori, et al. Thus, for Examples 1-7 and 9 of Hattori, et al. in which the ratio of layer A to layer B was 16:84 (about 1:6.2) and Example 8 (ratio equal 6:94 or about 1:16), the laminates had a high level of gloss (75-80%) and fair to very good deep drawing properties of 10-20 seconds (note column 6, lines 33-36 of Hattori, et al. which states that longer preheating time means a broader temperature range where molding is possible and hence good moldability). In contrast, where the films of the present invention had an unfilled/filled layer ratio on the order of about 1:6 (see Table 1 of Second Bernig Declaration), the film had a paper-like appearance (*i.e.*, low gloss).

Further, Comparative Examples 10 and 11 in Table 2 of Hattori, et al. demonstrate that when the ratio of unfilled layer A to filled layer B increased to 50:50 (1:1), the laminate retained its high gloss (82%) but had very poor deep drawing properties (only 5 seconds) (compare Test III c. of the Second Bernig Declaration or Comparative Example 2 of the present specification where the range of thermoforming temperature was very high); and when the ratio of unfilled layer A to filled layer B decreased to 0.4:99.6 (Comparative Example 11), the deep drawing properties remained good, but the gloss deteriorated to only 30% (compare Test Examples III a. and III b. of the Second Bernig Declaration or Comparative Example 1 in the present specification, where the range of thermoforming temperatures was very low for low layer ratios).

Hence, even if Hattori, et al. were properly combinable with the various other prior art references used by the Examiner in the obviousness rejections, which applicants do not agree, one skilled in the art would not expect the combination of advantageous properties of the

films of the presently claimed invention, namely both paper-like texture and appearance and very good thermoforming properties. Accordingly, any *prima facie* case of obviousness made out by the Examiner is overcome, and reconsideration and withdrawal of the rejections are respectfully requested.

In view of the above amendments, it is submitted that the formal rejection under 35 U.S.C. 112 has been overcome, and in view of the above Remarks and the enclosed Second Declaration of Walter Bernig, it is submitted that the claims patentably distinguish over the prior art. Accordingly, reconsideration and an early Notice of Allowance are respectfully solicited. In the event that the Examiner still has any questions or concerns about the data submitted, it is requested that the Examiner telephone the undersigned, so that such questions or concerns can be discussed and addressed in order to expedite the further prosecution of this application.

Respectfully submitted,

ULRICH REINERS, ET AL.

March 11, 2003

(Date)

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Marked-Up Version of Specification, Abstract and Claim

U.S. Patent Application No. 09/851,460

Shown below are portions of the specification, Abstract and claim marked up to show the changes made. Please note that deletions are indicated by brackets and insertions are indicated by underlining.

At page 2, line 25 to page 3, line3, please amend the paragraph to read as follows:

-- This and other objects and advantages are achieved according to the invention by the supply of an asymmetrically composed film, comprising a filled layer based on polypropylene and several unfilled layers characterized in that the filled layer comprises 40-75 weight % of inorganic filler, forms one of the surface layers of the film and has a thickness of [³40 gm] at least 40 µm, the unfilled layers comprise at least one barrier layer and one sealing layer and optionally at least one adhesive layer, and the [relation] ratio of the sum of the thicknesses of the unfilled layers to the thickness of the filled layer is from 1:8 to 1:1.2. –

At page 3, lines 11-17, please amend the paragraph to read as follows:

-- The matrix polymer of the filled layer is based on polypropylene.

Homopolymer, as well as propylene/ethylene copolymer, or a mixture of both can be used. Preferably polypropylene-homopolymer with a melt index of 0.5 to 7, particularly preferred of 1.5 to 4.5g/10 min (2.16 kg, 230° C measured according to [ASTM] ASTM 1238) is used. In another preferred embodiment a propylene/ethylene copolymer with a melt index between 0.5 and 5g/10 min (2.16 kg, 230° C, measured according to ASTM 1238) is used. –

At page 3, lines 21-23, please amend the paragraph to read as follows:

-- As an unfilled layer according to the present invention, a layer containing inorganic additives in the usual amount ([£] ≤ 2 weight %) is also intended to be included. –

At page 4, lines 4-15, please amend the paragraph to read as follows:

-- If for the adhesion between the filled layer and the barrier layer no adhesive is used, the barrier layer must contain the matrix polymer of the filled layer as one component. The other component in the barrier layer can be polyvinylidene chloride (PVDC), polyamide (PA) or a similar polymer with good gas-tightness, preferably, however, EVOH. The percentage of the gas-tight component in the barrier layer can vary within wide limits. Preferably it should amount to 40-80 weight % based on the total weight of the barrier layer. A barrier layer consisting of 40 weight % of EVOH and 60 weight % of matrix polymer with a melt index of 1.2-8g/10 min (MFI according to [ASTIVI] ASTM 1238, 230° C) has proven to be the most preferable used. Should the filled layer and the barrier layer be connected by means of an adhesive, the barrier layer is preferably composed of a gas-tight polymer, especially preferred being EVOH. –

At page 9, lines 22-28, please amend Comparative Example 1 as follows:

-- The film used has the same composition of the layers as described in Example 1. The thickness of the layers, however, are:

Layer <u>A</u> :	500 µm
Layer <u>B</u> :	5 µm
Layer <u>C</u> :	10 µm
Layer <u>D</u> :	5 µm
Layer <u>E</u> :	30 µm

At page 13, lines 2-7, please amend the Abstract to read as follows:

-- A paper-like multilayer barrier film comprises a filled polypropylene layer and several unfilled layers. The filled layer contains 40-75% by wt. of inorganic fillers, forms one of the two outside layers of the film, and has a thickness of [³40 m..] at least 40 µm. The unfilled layers include a barrier layer, a sealing layer, and optionally at least one adhesive layer. The ratio of the total thickness of the unfilled layers to the thickness of the filled layer is in the range of 1:8 to 1:1.2. –

Please amend claim 1 to read as follows. A marked-up copy of the amended claims showing the amendments is attached hereto.

-- 1. (Twice amended) A multilayer barrier film [with an appearance and texture of paper] comprising a filled layer based on polypropylene and a plurality of unfilled layers, wherein the filled layer is filled with 40-75 weight %, based on the total weight of the filled layer, of an inorganic filler, forms one of the two surface layers of the film, and has a thickness of 40 μm to 400 μm , the unfilled layers comprising at least a barrier layer and a sealing layer and optionally at least one adhesive layer, and the ratio of the total thickness of the unfilled layers to the thickness of the filled layer being from 1:8 to 1:1.2. --